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Mark Miller, AEMO

Submitted by email: data.comms@aemo.com.au

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Dear Mark

RE: Review of power system data communication standard – Issues paper

Thank you for the opportunity to provide feedback on the issues paper for the review of the power system data communication standard.

Enel X operates Australia’s largest virtual power plant.¹ We work with commercial and industrial energy users to develop demand-side flexibility and offer it into the NEM’s energy and ancillary services markets, the RERT mechanism, and to network businesses. Enel X is a registered DRSP (for the provision of both ancillary services and wholesale demand response) and a registered SGA.

This submission sets out our responses to the questions in the issues paper. Our submission focuses on the issues raised in relation to architectural requirements and data protocols. The key points are:

- We agree that changes to the current architecture for NEM power system data communications and new data protocols are required to accommodate growing participation by VPPs and demand-side assets in the energy market.
- However, this is not an “emerging issue” as the paper suggests. The delay in commencing this review has had, and continues to have, a real impact on the proper implementation of the wholesale demand response mechanism.
- The standard must be updated to accommodate a new, cost-effective data protocol for DRSPs as soon as possible. Enel X’s preferred protocol is DNP3.
- Changes to the standard to accommodate broader participation by DER assets should be put on hold until the *Scheduled lite* rule change is further progressed.

If you have any questions or would like to discuss this submission further, please do not hesitate to contact me.

Regards

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Manager, Industry Engagement and Regulatory Affairs
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¹ Bloomberg NEF, December 2019.

Section 3.2.1 – Scope of standard

Question: Does the Standard need to cover SGAs? If so why and on what basis should the requirements be set?

The paper is correct in stating that SGAs will be able to provide FCAS from March 2023. However, it's not clear that changes to the standard will be needed to accommodate this change. We ask that AEMO provide further information on why changes might be required.

Question: Are changes to Standard required now to accommodate the Scheduled Lite Visibility Model? If so, what changes are required? What future changes to the Standard are likely to be required to accommodate the Scheduled Lite Dispatchability Model?

The issues paper states that the visibility model being proposed under the *Scheduled lite* rule change may require the provision of five-minute data to AEMO "by mid-2022". However, this model is still in development and a rule change would be required to implement it.

In Enel X's understanding, AEMO will submit the *Scheduled lite* rule change request (comprising both the visibility and dispatchability models) to the AEMC in mid-2022. A rule change process will follow and the rule, if made, would presumably involve an implementation period. So, while we agree that the *Scheduled lite* rule (if made) would have implications for the standard, it is too early to be discussing what changes to the standard might be required.

Section 3.2.2 – Architectural requirements

Question: What changes to the current NEM power system data communications structure are likely to be required? Are there different options for such changes?

We agree that changes to the current architecture for NEM power system data communications are likely to be required to accommodate growing participation by VPPs and demand-side assets in the energy market. However, this is not an "emerging issue" as the paper suggests. It is a real issue now that is having significant implications for the success of the wholesale demand response mechanism. The standard is already not fit for purpose and must be updated to accommodate a new architecture and data protocol as soon as possible. Our more detailed comments on this are set out in the next section.

Beyond the changes required to support the proper implementation of the wholesale demand response mechanism, we agree that the standard will likely need to evolve to accommodate information exchanges between AEMO and smaller DER assets. At this stage, the *Scheduled lite* rule change appears to be the most appropriate forum to consider these issues. As noted in our response to the question above, changes to the standard should only be considered once a policy decision has been made through that rule change.

We therefore recommend that AEMO focus its immediate attention on addressing the issues in the standard as they relate to DRSPs and the proper implementation of the wholesale demand response mechanism. The decision made by AEMO on these matters can then lay the groundwork for further developments once the policy direction of the *Scheduled lite* rule change is clearer.

Section 3.2.3 – Data protocols

The wholesale demand response mechanism rule was made by the AEMC in June 2020. The final rule required AEMO to develop guidelines that, among other things, set out the obligations on DRSPs with respect to the communication of data to AEMO. In October 2020 AEMO published an issues paper to commence the development of the WDR guidelines.² The issues paper set out AEMO’s initial views on the telemetry requirements for wholesale demand response, and proposed that the guidelines would refer to the *Power system data communications standard*. The issues paper noted that AEMO was “preparing to commence consultation on amendments to this standard” and was “targeting finalisation of these amendments by mid-2021” ahead of WDR market start in October 2021.

In its submission to the issues paper, Enel X pointed out that DRSPs would have no clarity on the telemetry obligations that would apply until AEMO completed its review of the standard, and thus it would be difficult for DRSPs to assess the costs of participation in the WDRM. AEMO acknowledged this point in its draft determination, published January 2021, and reiterated its intention to review the standard in 2021 ahead of market start. The accompanying draft WDR guidelines consequently included a requirement that DRSPs comply with the standard when transmitting data to AEMO.

In its submission to the draft determination, Enel X highlighted the ongoing uncertainty surrounding the content and timing of the standard review. We also commented on the costs and implications of requiring DRSPs to set up a secure ICCP connection to comply with the existing standard should the review not be complete in time for market start. AEMO’s final determination, published in March 2021, acknowledged these concerns and reiterated AEMO’s intention to “review and consult on the *Power system data communications standard* in 2021 to allow for additional, lower cost interfaces and to update existing requirements.”

Consequently, clause 3.1(e) of AEMO’s final WDR guidelines require DRSPs to comply with the *Power system data communications standard*. Appendix A of the guidelines sets out the telemetry data that DRSPs must provide to AEMO, in accordance with the standard.

In summary – AEMO flagged its intention to review the standard in 2020 and acknowledged that this would need to be done to support a more cost-effective, direct communication between DRSPs and AEMO for the purposes of fulfilling their obligations under the NER and WDR guidelines. When the WDRM commenced in October 2021, the review had not yet commenced. DRSPs wanting to participate in the WDRM could either invest to meet the existing ICCP standard, which is not fit for purpose for the provision of WDR by distributed assets, or seek an exemption from the telemetry obligations, where those obligations applied. This remains the case today.

The delay in considering this issue has driven significant regulatory and investment uncertainty for Enel X over the past 12 months. We assume that it is also hindering broader participation in the WDRM, as no prudent DRSP will invest in secure ICCP capability when AEMO has flagged its intention to introduce alternative, lower-cost protocols. This regulatory uncertainty will persist for as long as AEMO delays consideration of this issue. Further, the longer AEMO delays consideration of this issue the more untelemetered WDR MW there will be in the market.

² The issues paper, draft determination and guideline, final determination and guideline, and submissions to each stage of the consultation process can be found [here](#).

Question: If generators and other participants were permitted to communicate directly with AEMO, then what types of data protocols would be preferred?

We strongly support the consideration of alternatives to secure ICCP. There are a range of cost-effective and flexible protocols that would support data sharing between AEMO and participants.

Enel X's preferred protocol is DNP3. DNP3 provides a complete set of functionalities that we believe is well suited to NEM requirements. It is an open, intelligent, robust, and efficient modern SCADA protocol. It is supported by many SCADA equipment manufacturers, and thus provides interoperability between different vendors' equipment. DNP3 can:

- request and respond with multiple data types in single messages
- segment messages into multiple frames to ensure excellent error detection and recovery
- include only changed data in response messages
- assign priorities to data items and request data items periodically based on their priority
- respond without request (unsolicited)
- support time synchronisation and a standard time format
- allow multiple masters and peer-to-peer operations
- allow user definable objects and file transfer.

We also note AEMO's comment in the workshop on 18 Nov 2021 that DNP3 is supported by AEMO's existing vendor, so this solution may be the quickest and simplest to implement.

This all said, Enel X is capable of implementing a range of different protocols, and we support the exploration of other options. Fundamentally, though, any new protocol must be something that AEMO itself can support (from both a technical and resourcing perspective) and ideally something that can be implemented in a timely and cost-effective manner.

Question: If for cyber security and other reasons, only a single protocol could be accommodated in addition to secure ICCP, what criteria should AEMO use to determine the most suitable protocol?

As noted in our response to earlier questions, an additional protocol is needed as a matter of priority to support the effective implementation of the WDRM. We therefore support a protocol that:

1. enables AEMO and DRSPs to fulfil their respective obligations under the WDRM
2. is cost-effective for both AEMO and DRSPs to implement
3. can be implemented quickly.

It is also worth considering whether the chosen protocol is likely to be suitable for future needs, including as a result of the *Scheduled lite* rule change, and to support the provision of regulating FCAS from distributed, non-scheduled assets.